

**REMARKS**

Claims 1-14 are pending in this application. By this Amendment, the specification and claims 1, 5, 7-11 and 14 are amended.

**I. The Specification Satisfies All Formal Requirements**

The Office Action objects to the specification due to informalities. The specification is amended to obviate this objection.

**II. The Claims Satisfy All Formal Requirements**

The Office Action objects to the claims due to informalities. The claims are amended to obviate this objection.

**III. The Drawings Satisfy All Formal Requirements**

The Office Action objects to the drawings. The specification is amended to provide a description of element 303.

**IV. The Claims Satisfy the Requirements Under 35 U.S.C. §112, Second Paragraph**

The Office Action rejects claims 6, 9 and 14 under 35 U.S.C. §112, second paragraph.

With respect to claim 6, when the catalyst (the first honeycomb catalyst portion and the second honeycomb catalyst portion) is placed in the central region in a radial direction of the exhaust way of the exhaust pipe, it is possible to obtain the effect that the catalyst is brought into contact with the exhaust gas most frequently.

With respect to claim 9, the "second blowing passage" is shown in Figs. 4 and 5. The second blowing passage is element 201. See e.g., specification at page 22, line 24.

With respect to claim 14, claim 14 is amended to obviate this rejection.

**V. The Claims Define Patentable Subject Matter**

The Office Action rejects claims 1, 2 and 5-14 under 35 U.S.C. §103(a) over JP 05-086843 in view of U.S. Patent No. 5,272,875 to Kaji. This rejection is respectfully traversed.

In claim 1, the radial cross-sectional area ( $Sc$ ) in a catalyst region of the first honeycomb catalyst portion is set in the  $1/5 - 2/3$  range with respect to the radial cross-sectional area ( $St$ ) of a flowing way defined by the inwall surface of the first mounting position of the exhaust way with the first honeycomb catalyst portion being removed, specifically  $0.2 - 0.67$ ". According to claim 1, when the radial cross-sectional area in a catalyst region of the first honeycomb catalyst portion is  $Sc$  and the radial cross-sectional area of the whole flowing way defined by the inwall surface of the first mounting position of the exhaust way is  $St$ , it is set that  $Sc/St = 1/5 - 2/3$  ( $0.2 - 0.67$ ) range. Thus, it is possible to raise a purification ability of the exhaust gas while suppressing a decrease of engine output.

JP 843 does not disclose these features. In JP 843, neither the specification nor the drawings contain a concrete description of the radial cross-sectional area and the diameter which indicates such characteristics. Specifically, there is no concrete disclosure of the radial cross-sectional area ( $Sc$ ) and the radial cross-sectional area ( $St$ ). Thus, JP 843 does not provide the features of claim 1.

When the diameter is measured based on Fig. 3 of JP 843, the diameter of an external sleeve 23 is 3.4 cm, and the diameter of a honeycomb catalyst portion 27 having a function to purify exhaust gas is 1.2 cm.

As described in paragraph [0015] of JP 843, element number 30 in Fig. 3 is a supporting member to support the honeycomb catalyst portion 27. The supporting member in which catalyst components (for example  $P_t$  etc.) are not loaded, thus, the supporting member does not have the function to purify exhaust gas. Thus, the supporting member 30 is not a honeycomb catalyst portion 27.

Furthermore, in JP 843 the diameter of a circle is defined as  $D$  and the radial cross-sectional area of a circle is expressed as  $(\pi \times D^2) / 4$  when the ratio of  $Sc/St$  is actually calculated by using Fig. 3 of JP 843, the radial cross-sectional area of a flowing way defined

by the inwall surface of the first mounting position of the exhaust way with the honeycomb catalyst portion 27 being removed is expressed by the following formula:

$$Sc/St = \{[(\pi \times 1.2^2)/4] / [\pi \times 3.4^2 / 4]\} = (1.2)^2 / (3.4)^2 \approx 0.12$$

Here,  $a = 1.2$  and  $b = 3.4$ . Thus, according to the algebraic formula,  $a^2/b^2 = (a/b)^2$ ; and on the basis of the variation of expansion ratio of reduction ratio or Fig. 3, even if the value  $(a/b)$  varies at equimultiple, the same conclusion ( $Sc/St = 0.12$ ) is fundamentally obtained because  $a^2/b^2 = (a/b)^2$ . Thus, according to JP 843, the ratio of ( $Sc/St$ ) is approximately 0.12 and this markedly departs from the range ( $1/5 - 2/3$  range =  $0.2 - 0.67$  range) of claim 1.  $Sc/St = 0.12$  means that JP 843 neither discloses nor suggests the features of claim 1.

According to a characteristic line of Fig. 8 of the specification, when the value of the horizontal axis ( $Sc/St$ ) is 0.12, the purification ability of the exhaust gas is remarkably degraded although the horsepower output of an engine is ensured. Therefore, JP 843 does not achieve the effects of claim 1 wherein a purification ability of the exhaust gas can be raised while suppressing the decrease in engine output.

The Office Action rejects claim 3 under 35 U.S.C. §103(a) over JP 843 in view of Kaji and further in view of DE 19530142 to Reck et al. and claim 4 under 35 U.S.C. §103(a) over JP 843 in view of Kaji and further in view of U.S. Patent No. 5,352,554 to Yasaki et al. These rejections are respectfully traversed. In addition to claims 2 and 5-14 rejected above, claims 3 and 4 depend from claim 1, which as discussed above contains patentable subject matter. Thus, withdrawal of this rejection is respectfully requested.

**VI. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-14 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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